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Health & Medicine, Obesity

Results: Appropriateness of the data collection methods for the study

The data collection method was observational study. It involved the recording of some baseline measurements and latter on respective changes in weight and height in order to obtain the Body Mass Index (BMIs) of school children who would participate in the study for a period of about two years (Ludwig, Peterson & Gortmaker, 2001. This method of data collection was suitable because, the dependent and the dependent and independent are measurable quantities or aspects. The method also allows for the incorporation of interviews and surveys using questionnaires on the respondents in order to make conclusive observations and measurements. For instance, the use of the questionnaires and interviews as back up to the measurements of weights and heights could allow researchers to obtain information on the sweetened drinks that the respondents had taken (Ludwig, Peterson & Gortmaker, 2001. The acquisition of sufficient and varied data helps in the processing and analysis of respondents in order to address the topic satisfactorily.

Protection of the rights of subjects

The rights of the subjects who were schoolchildren were satisfactorily protected. Prior to its commencement, the Committee on Human Subjects (CHS) at the Harvard School of Public Health approved the study (Ludwig, Peterson & Gortmaker, 2001. The researchers obtained the informed consent of all the subjects to the study. Trained teachers supervised the children as they completed questionnaires independently and as such, the children had

some moral and technical support to aid them to take part in the study. The CHS had approved the youth food-frequency questionnaire (YFFQ), as being fit for use in socio-economically and ethically diverse populations and as such, the subjects had been assured of non-marginalization, victimization or any form of discrimination.

Suitability of the data collection tool in supporting the reliability and validity of the study

The data collection too used in the study supports the validity and reliability of the study. The tool used (measurements of heights, weights) yielded accurate and verifiable date that helps in the establishment of the absolute measure of obesity, which is the BMI (Kg/M2). The BMI is calculated as the weight in Kilograms (Kg) divided by the square of the height in Meters (M). As such, the measurement of height and weight helps in the identification of changes in the dependent variable (obesity). Measurements of the thickness of the subjects' triceps were also taken to enhance establishment of weight status. The use of interviews and the youth food-frequency questionnaire (YFFQ) helped in the collection of data regarding average intake of drinks, the percentage energy intake from dietary fat, and the total energy intake. The respondents answered on how often in the last 30 days they had consumed three items; soda, iced tea and Hawaiian punch, Kool-Aid or other related sweetened drink (Ludwig, Peterson & Gortmaker, 2001. The frequencies were established as once per week, twice per week, once per month and so on. In addition, the researchers took two or three measurements in each case as well as considerations on minimal margins of error e. g. 0. 2 mm for the triceps measurement and 0. 1 cm for the height

(Ludwig, Peterson & Gortmaker, 2001. The researchers also factored in exercises that can lead to weight loss. As such, the observational data collection method aided in the collection of accurate, and verifiable data which supports in the validity and reliability of the study. Appropriateness of the Data analysis procedures used

The data analysis procedure used the SUDAAN software, which is suitable in the analysis of clustered data. The students had been clustered within schools and the SUDAAN software helped to correlate the data and estimate regressions while accounting for clustered samples (Ludwig, Peterson & Gortmaker, 2001. The software used implicit Taylor linearization method. The Generalized Estimation Equation (GEE) method was used with software that incorporated the Statistical Analysis System (SAS) sets in order to take care of the dichotomous or the division of an aspect into two classes, in this case obese and non-obese (Ludwig, Peterson & Gortmaker, 2001). The estimation analyses using the SUDAAN software and the GEE took into account the intraclass correlation of the responses within schools.

Appropriateness of the data analysis procedures in answering the research questions and in testing the study hypothesis

The data analysis procedure used was suitable in answering the research questions and in testing the study hypothesis. The research question was " what is the relationship between childhood obesity and consumption of sugar-sweetened drinks?" To this end, the data analysis procedure contained the terms for the baseline consumption of sugar-sweetened drinks as well as changes in consumption (Ludwig, Peterson & Gortmaker, 2001). The

procedure also checked on the relations between the independent variables in order to ensure lack of multicollinearity. The researchers adjusted the sets of variables that could confound the associations between measures of obesity (BMI and triceps-skin fold thickness) and the intake of sugar-sweetened drinks. The baseline measurements also included all the demographic factors (age, ethnicity, sex) that could affect the dependent variable, which is obesity.

In addition, the study was appropriate in testing the hypotheses of the study. The study had hypothesized that " consumption of sugar-sweetened foods and drinks can cause obesity". The data analysis procedure factored in demographic factors (age and sex) as well as the physical activities that can have impact on the weights of the subjects (Ludwig, Peterson & Gortmaker, 2001). As such, the data analysis analyzed and made conclusions on data that has a direct impact in responding to the hypotheses as accurately and truthfully as possible. Key distinctions between qualitative and quantitative data

Qualitative data deals with descriptions on quality, and unquantifiable aspects, while quantitative data deals with numbers, measurements, and aspects that can be quantified (Creswell, 2003). Qualitative data can be observed but not measured. It includes aspects such as textures, smells, tastes, beauty, and appearance (Creswell, 2003). Quantitative data involves measurable data such as temperature, area, weight, humidity, height, speed, time, ages, costs, volume among others (Creswell, 2003).

Qualitative data is also used for exploratory research. It helps researchers gain insights on motivations, opinions, underlying reasons among other

related issues. Quantitative data deals with the quantification of data in order to generate useable statistics (Creswell, 2003). It can quantify the qualitative aspects of attitudes, behaviors, and opinions from a large sample. The data collection and analysis methods are more profound for qualitative data study as compared to those of qualitative studies.

Conclusion Summarize the findings of the study

The study concluded that for each additional serving of a sugar-sweetened drink that a subject consumed, the BMI (mean of 0. 24 Kg/M2; p= 0. 03; 95% Cl 0. 10-0. 39) and the frequency of obesity (odds ratio 1. 60; p= 0. 02; 95% Cl 1. 14-2. 24) increased after some adjustments on the dietary, demographic, anthropometric and lifestyle variables (Ludwig, Peterson & Gortmaker, 2001). The baseline consumption of sugar-sweetened drinks was independently associated with changes in BMI.

Strengths of the scientific merit of this study

The major strengths of this study were is ability to utilize a large sample size of 548 subjects. Moreover, it made use of ethnic and gender diversity in order to come up with verifiable and credible results that can find applications in multicultural societies. The study also utilized proper data collection methods by taking in all the relevant measurements that were pertinent in the determination of the stated hypothesis. In addition, the study used relevant data analysis softwares that were able to handle and harmonize data for students in different schools. Moreover the study was conducted over a lengthy period (19 months) that is adequate in coming up with a conclusive study.

Major limitations/weaknesses of the scientific merit of this study

The Major limitation of this study was the overreliance on the trust to establish crucial facts on the independent variable-consumption of sugar-sweetened drinks. Some subjects could forget or lie on the number of drinks that had taken over s given period. This could have altered the results of the study.

Explain if the findings support the hypotheses

The findings support the hypotheses because the study concluded, " consumption of sugar-sweetened drinks is associated with obesity in children.

References

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